APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,412	08/03/2001	Robert W. Cantwell	5624.24-2	7272

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EXAMINER
ROBERTS, BRIAN S

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/922,412	CANTWELL, ROBERT W.
	Examiner	Art Unit
	Brian Roberts	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 5-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 5-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

- Applicant's Amendment filed 03/02/2006 is acknowledged.

- Claims 2-4 have been cancelled.

- Claims 1 and 5-22 have been examined.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 5, 7-11, 13-18, and 20-22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Russell et al. (US 6496519) in view of Baun et al. (US 6771673)

-    In reference to claim 1

In Figure 1 and 9, Russell et al. teaches a system that includes:

- A switch (103; 104; 904) inherently having a plurality of ports for receiving

    data from a plurality of Ethernet ports and switching the data to a plurality of

    ports

- A multiplexer (100; 101; 903) coupled to the switch (103; 104; 904) and

    operable to multiplex the Ethernet data frames from the plurality of Ethernet

    ports into a single serial data stream, the multiplexer (100; 101; 903) being

operable to multiplex the Ethernet frames from the plurality of Ethernet ports

into one or more SDH or SONET payloads

Russell et al. does not explicitly teach the switch being operable to insert a

unique port identifier into a predefined header of the data from each port to identify the

port from which the data is received.

Baun et al. teaches the concept of inserting a unique identifier in the header of a

data packet. The unique identifier is assigned to a logical port or interface associated

with the physical port. The unique port identifier is utilized by a switch to route the data

packet to a destination node and facilitates the provisioning of different quality of service

levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the equipment and method of Russell et al. to include the switch

being operable to insert a unique port identifier into a predefined header of the data

from each port to identify the port from which the data is received as taught by Baun et

al. because it would facilitate the routing of data packets to a destination node and the

provisioning of different quality of service levels.

-   In reference to claim 5

In Figure 9, Russell et al. further teaches a subscriber access multiplexer (103;

104; 904) operable to receive the single serial data stream from the multiplexer (100;

101; 903), demultiplex the serial data stream into data from each port,

Russell et al. does not teach routing the data based on the unique port identifier.

Baun et al. teaches the concept of inserting a unique identifier in the header of a data packet. The unique identifier is assigned to a logical port or interface associated with the physical port. The unique port identifier is utilized by a switch to route the data packet to a destination node and facilitates the provisioning of different quality of service levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the equipment and method of Russell et al. to include the subscriber access multiplexer being operable to routing the data based on the unique port identifier as taught by Baun et al. because it would facilitate the routing of data packets to a destination node and the provisioning of different quality of service levels.

-   In reference to claim 7

Russell et al. further teaches:

- A subscriber access multiplexer (100; 101; 903) operable to receive data from a plurality of sender nodes in a network and multiplex the data into a single serial data stream

- The multiplexer (904) being operable to receive the single serial data from the subscriber access multiplexer (100; 101; 903) and demultiplex the data

- The switch (100; 101; 903) being operable to switch the demultiplexed data to the plurality of ports

Russell et al. does not explicitly teach that the subscriber access multiplexer is operable to insert the unique port identifier based on an IP address of the sender node

of the data or teach the switch switching the demultiplexed data based on the unique

port identifier to the plurality ports.

Baun et al. teaches the concept of inserting a unique identifier in the header of a

data packet. The unique identifier is assigned to a logical port or interface associated

with the physical port. The unique port identifier is utilized by a switch to route the data

packet to a destination node and facilitates the provisioning of different quality of service

levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the equipment and method of Russell et al. to include the subscriber

access multiplexer to insert the unique port identifier based on an IP address of the

sender node of the data and switching the demultiplexed data based on the unique port

identifier to the plurality ports as taught by Baun et al. because it would facilitate the

routing of data packets to a destination node and the provisioning of different quality of

service levels.

-    In reference to claim 8

In Figure 9, Russell et al. teaches receiving the single serial data stream from the

multiplexer (904) and route the data to the destination inherently based on a MAC

address and IP address in the data.

Russell et al. does not explicitly teach routing the data to a destination network

node based on the unique port identifier.

Baun et al. teaches the concept of inserting a unique identifier in the header of a data packet. The unique identifier is assigned to a logical port or interface associated with the physical port. The unique port identifier is utilized by a switch to route the data packet to a destination node and facilitates the provisioning of different quality of service levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the equipment and method of Russell et al. to include the multiplexer being operable to routing the data based on the unique port identifier as taught by Baun et al. because it would facilitate the routing of data packets to a destination node and the provisioning of different quality of service levels.

-   In reference to claim 9

In Figures 1 and 9, Russell et al. further teaches:

• Receiving data from a plurality of ports

• Multiplexing the data from the plurality of ports into a single data stream for transmission by synchronous transmission medium (102, 900).

Russell et al. does not teach adding a unique port identifier to the data from each port to identify the port from which the data came.

Baun et al. teaches the concept of inserting a unique identifier in the header of a data packet. The unique identifier is assigned to a logical port or interface associated with the physical port. The unique port identifier is utilized by a switch to route the data

packet to a destination node and facilitates the provisioning of different quality of service levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the equipment and method of Russell et al. to include adding a unique port identifier to the data from each port to identify the port from which the data came as taught by Baun et al. because it would facilitate the routing of data packets to a destination node and the provisioning of different quality of service levels.

- In reference to claim 10

The combination of Russell et al. and Baun et al. teaches a system and method that covers substantially all limitations of the parent claims. In Figures 1 and 9, Russell et al. further teaches receiving data from a plurality of Ethernet ports.

- In reference to claim 11

The combination of Russell et al. and Baun et al. teaches a system and method that covers substantially all limitations of the parent claims. In Figures 1 and 9, Russell et al. teaches multiplexing the data comprises multiplexing the data into a single synchronous payload envelope.

- In reference to claim 13

The combination of Russell et al. and Baun et al. teaches a system and method that covers substantially all limitations of the parent claims. In Figures 1 and 9, Russell

et al. teaches converting the single serial data stream into SONET optical signals for

transmission.

- In reference to claim 14

In Figures 1 and 9, Russell et al. teaches receiving the single stream;

demultiplexing the single serial data stream into data from each port; and routing the

data from each port.

Russell et al. does not explicitly teach routing the data from each port based on

the unique port identifier.

Baun et al. teaches the concept of inserting a unique identifier in the header of a

data packet. The unique identifier is assigned to a logical port or interface associated

with the physical port. The unique port identifier is utilized by a switch to route the data

packet to a destination node and facilitates the provisioning of different quality of service

levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the equipment and method of Russell et al. to include the switch

being operable to insert a unique port identifier into a predefined header of the data

from each port to identify the port from which the data is received as taught by Baun et

al. because it would facilitate the routing of data packets to a destination node and the

provisioning of different quality of service levels.

- In reference to claim 15

In Figures 1 and 9, Russell et al. teaches receiving data from a plurality of sender nodes in a network; multiplexing the data into a single serial data stream for transmission; receiving the transmitted data and demultiplexing the data into data from each sender node; and switching the demultiplexed data to the plurality of ports.

Russell et al. does not explicitly teach inserting a unique port identifier based on an IP address of the sender node of the data and switching the demultiplexed data based on the unique port identifier.

Baun et al. teaches the concept of inserting a unique identifier in the header of a data packet. The unique identifier is assigned to a logical port or interface associated with the physical port. The unique port identifier is utilized by a switch to route the data packet to a destination node and facilitates the provisioning of different quality of service levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the equipment and method of Russell et al. to include the subscriber access multiplexer to insert the unique port identifier based on an IP address of the sender node of the data and switching the demultiplexed data based on the unique port identifier to the plurality ports as taught by Baun et al. because it would facilitate the routing of data packets to a destination node and the provisioning of different quality of service levels.

- In reference to claim 16 and 22

In Figures 1 and 9, Russell et al. further teaches receiving the single serial data stream and routing the data to the destination inherently based on a MAC address and IP address in the data.

Russell et al. does not explicitly teach routing the data to a destination network node based on the unique port identifier.

Baun et al. teaches the concept of inserting a unique identifier in the header of a data packet. The unique identifier is assigned to a logical port or interface associated with the physical port. The unique port identifier is utilized by a switch to route the data packet to a destination node and facilitates the provisioning of different quality of service levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the equipment and method of Russell et al. to include routing the data based on the unique port identifier as taught by Baun et al. because it would facilitate the routing of data packets to a destination node and the provisioning of different quality of service levels.

- In reference to claim 17

In Figures 1 and 9, Russell et al. teaches:

- Receiving framed data from the plurality of ports

- Multiplexing the data from the plurality of ports into a single synchronous payload envelope

- Converting the multiplexed data into a optical signal for transmission

Russell et al. does not teach adding a unique port identifier to a predetermined header field of the framed data from each port to identify the port from which the data came.

Baun et al. teaches the concept of inserting a unique identifier in the header of a data packet. The unique identifier is assigned to a logical port or interface associated with the physical port. The unique port identifier is utilized by a switch to route the data packet to a destination node and facilitates the provisioning of different quality of service levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the equipment and method of Russell et al. to include adding a unique port identifier to a predetermined header field of the framed data from each port to identify the port from which the data came as taught by Baun et al. because it would facilitate the routing of data packets to a destination node and the provisioning of different quality of service levels.

- In reference to claim 18

In Figures 1 and 9, Russell et al further teaches receiving data from a plurality of Ethernet ports.

- In reference to claim 20

In Figures 1 and 9, Russell et al. further teaches:

• Receiving the optical signal and converting to a single data stream

- Demultiplexing the data stream from each port

Russell et al. does not explicitly teach routing the data from each port based on the unique port identifier.

Baun et al. teaches the concept of inserting a unique identifier in the header of a data packet. The unique identifier is assigned to a logical port or interface associated with the physical port. The unique port identifier is utilized by a switch to route the data packet to a destination node and facilitates the provisioning of different quality of service levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the equipment and method of Russell et al. to include routing the data based on the unique port identifier as taught by Baun et al. because it would facilitate the routing of data packets to a destination node and the provisioning of different quality of service levels.

- In reference to claim 21

In Figures 1 and 9, Russell et al. further teaches:

- Receiving data from a plurality of sender nodes in a network

- Multiplexing the data into a single serial data stream for transmission

- Receiving the transmitted data and demultiplexing the data into data from each sender node

- Switching the demultiplexed data to the plurality of ports

Russell et al. does not explicitly teach switching the demultiplexed data based on the unique port identifier.

Baun et al. teaches the concept of inserting a unique identifier in the header of a data packet. The unique identifier is assigned to a logical port or interface associated with the physical port. The unique port identifier is utilized by a switch to route the data packet to a destination node and facilitates the provisioning of different quality of service levels. (abstract; Figure 13; column 8, lines 55-65)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the equipment and method of Russell et al. to include switching the demultiplexed data based on the unique port identifier as taught by Baun et al. because it would facilitate the routing of data packets to a destination node and the provisioning of different quality of service levels.

3.   Claims 6, 12, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al. (US 6496519) in view of Baun et al. (US 6771673), as applied to the parent claim, and further in view of "Virtual Local Area Networks" by Suba Varadarajan.

-    In reference to claim 6

The combination of Russell et al. and Baun et al. teaches a system and method that covers substantially all limitations of the parent claims.

The combination of Russell et al. and Baun et al. does not teach the Ethernet data frames with the predefined header containing a virtual LAN field.

In Figure 13, Varadarajan teaches utilizing Ethernet data frames containing a

virtual LAN ID field in the header in VLAN network. The virtual LAN ID field is used to

uniquely identify the VLAN to which a frame belongs. (section 4.3)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the system and method of the combination of Russell et al. and

Baun et al. to include the Ethernet data frames with the predefined header containing a

virtual LAN field as taught by Varadarajan because it allows the Ethernet frame to be

identified with the VLANs to which the Ethernet frame belongs.

-   In reference to claim 12 and 19

The combination of Russell et al. and Baun et al. teaches a system and method

that covers substantially all limitations of the parent claims.

The combination of Russell et al. and Baun et al. does not explicitly teach adding

the unique port identifier into a VID field of a tagged MAC frame of the data.

In Figure 13, Varadarajan teaches utilizing Ethernet data frames containing a

virtual LAN ID field in the header in VLAN network. The virtual LAN ID field is used to

uniquely identify the VLAN to which a frame belongs. (section 4.3)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the system and method of adding the unique port identifier of the

combination of Russell et al. and Baun et al. into a VID field of a tagged MAC frame of

the data as taught by Varadarajan because it would facilitate the routing of data packets

to a destination node and the provisioning of different quality of service levels and

minimize control overhead.

Response to Arguments

Applicant's arguments filed 03/02/2006 have been fully considered but they are

not persuasive.

- In the Remarks on pg. 7 of the Amendment, the Applicant contends that

  Russell et al. does not teach a plurality of switch ports connected to the

  multiplexer.

- The Examiner respectfully disagrees. In Figures 1 and 9, Russell et al.

  teaches a multiplexer (100; 101; 903) connected to a switch (103; 104; 904)

  with a plurality of ports.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Brian Roberts whose telephone number is (571) 272-

3095. The examiner can normally be reached on M-F 10:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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Business Center (EBC) at 866-217-9197 (toll-free).

BSR
05/17/2006

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